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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/905,615	07/13/2001	Gyudong Kim	19570-06206	3715

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Paul Hickman
OPPENHEIMER WOLFF & DONNELLY, LLP
1400 Page Mill Road
Palo Alto, CA 94304

EXAMINER

BAKER, STEPHEN M

ART UNIT	PAPER NUMBER
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2133

DATE MAILED: 07/12/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application

09/905,615

Applicant(s)

KIM ET AL.

Examiner

Stephen M. Baker

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-46 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-9 and 16-24 is/are allowed.
- 6) ☒ Claim(s) 10-15 and 25-42 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Objections

1. Claims 36-40 and 42-46 are objected to because of the following informalities:
"parameter includes" apparently should be "parameters include". Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 11, 14, 26, 29, 31 and 33 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. TMDS encoding rules, including an enumeration of the out-of-band TMDS codeword set and the in-band TMDS codeword set, critical or essential to the practice of the invention, but not included in the claims is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976).

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 10, 12, 13, 15, 25, 27, 28, 34, 35, 41, 43, 44 and 46 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,666,170 to Stewart (hereafter Stewart).

Stewart discloses a system for receiving and decoding convolutionally-encoded Direct Video Broadcast signals. To control synchronization, an error rate is measured in Stewart's system by comparing input data with data that has been convolutionally decoded and then re-encoded (col. 8, lines 49-65). Stewart's error rate measurement is a pseudo-error rate, as Stewart's measurement is an approximation of the actual error rate. Stewart's pseudo-error rate measurement is a "pseudo pixel error rate" as it is performed on a pixel data channel. The receiver's synchronization state is characterized by controlled parameters resolving the bit position and phase ambiguity of the received signal. The controller of these parameters is also a controller of parameters corresponding to the receiver's "equalization scheme", the receiver's "clocking scheme" and the receiver's "sampling method". Pseudo errors are presumably counted to determine the pseudo error rate, as determining an error rate inherently requires summing of errors. The input data that is compared with the re-encoded data is presumably delayed to match the delay of the re-encoded data, otherwise the comparison would be invalid.

6. Claims 10, 12, 13, 15, 25, 27, 28, 34, 35, 41, 43, 44 and 46 are rejected under 35 U.S.C. 102(a) as being anticipated by U.S. Patent No. 6,205,187 to Westfall (hereafter Westfall).

Westfall discloses a system for receiving and decoding convolutionally-encoded video signals. To control constellation phase and depuncturing phase parameters of synchronization, an error rate is measured in Westfall's system by comparing input data with data that has been convolutionally decoded and then re-encoded (col. 8, lines 4-5). Westfall's pseudo-error rate measurement is a "pseudo pixel error rate" as it is performed on a pixel data channel. Pseudo errors are presumably counted to determine the pseudo error rate. The input data that is compared with the re-encoded data is presumably delayed to match the delay of the re-encoded data.

7. Claims 15 and 34 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,566,206 to Butler *et al* (hereafter Butler).

Butler discloses a mobile radio system for receiving and decoding digital signals with multiple channel code rates. To control a decoder data rate parameter in Butler's receiver, pseudo-error rates are measured (100, 102, 104, 106) with counting of pseudo-errors detected by comparing a delayed received signal with several versions of the received signal that have been decoded and then re-encoded under various channel coding rate assumptions.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 10, 12, 13, 25, 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Butler in view of U.S. Patent No. 5,666,159 to Parulski *et al* (hereafter Parulski).

Butler does not specify receiving "pixel" data. Parulski demonstrates the suitability of mobile radio for receiving pixel data. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to apply Butler's mobile radio receiver to receiving "pixel" data, thereby applying Butler's pseudo-error rate measurement to the generation of a "pseudo pixel error rate". Such an application would have been obvious because Parulski demonstrates the suitability of mobile radio for receiving pixel data.

10. Claims 35, 36, 41 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Butler in view of Parulski and further in view of U.S. Patent No. 5,963,853 to Berg *et al* (hereafter Berg).

Butler also does not specify using detected error rate to control a termination resistance. Berg discloses using detected error rate to control a ground termination resistance for an electrodynamic field-shaping element associated with the receiver antenna of a mobile radio so that a fading minimum is shifted away from the location of

the antenna and the error rate is improved. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to incorporate Berg's termination resistance control into Butler's mobile radio receiver, using Butler's selected decoder error rate measurement for the error rate measurement required by Berg. Such a combination would have been obvious because Berg's termination resistance control has the advantage of reducing error rate and because Berg teaches applicability of the improvement to any mobile radio system.

11. Claims 35, 37, 39, 41, 43 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,721,756 to Liebetreu *et al* (hereafter Liebetreu).

Liebetreu discloses a system for receiving and decoding channel-encoded digital signals. To control bandwidth and equalization, an error rate is measured in Liebetreu's system by comparing input data with data that has been channel-code decoded and then re-encoded (col. 6, lines 7-17, 41-42). Liebetreu's error rate measurement is a pseudo-error rate, as Liebetreu's measurement is an approximation of the actual error rate.

Liebetreu doesn't restrict the nature of the received digital data and hence makes no mention of "pixel" transmission data. Liebetreu's pseudo-error rate measurement would be a "pseudo pixel error rate", if Liebetreu's data receiving system was to be used for receiving pixel data. Official notice is taken that pixel data is a well known and commonly used form of digital data. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to apply Liebetreu's digital data receiving system to the reception of "pixel" data, thereby applying Liebetreu's

pseudo-error rate measurement to the generation of a "pseudo pixel error rate". Such an application would have been obvious because Liebetreu doesn't restrict the nature of the received digital data, and because pixel data is a well known and commonly used form of digital data.

12. Claims 35, 36, 41 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable U.S. Patent No. 7,757,327 to Fiedler (hereafter Fiedler).

Fiedler discloses using pseudo error rate measurement to control the receiver's termination resistance and other receiver parameters. Pseudo errors are detected and counted to determine the pseudo error rate. Fiedler does not restrict the type of received data, and therefor does not specify receiving pixel data. Official notice is taken that the usefulness of pixel data was well known at the time the invention was made. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to apply Fiedler's receiver to pixel data. Such an application would have been obvious because the usefulness of pixel data was already well known.

13. Claims 30-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,811,361 to Bacou *et al* (hereafter Bacou).

Bacou discloses a receiver for data that has been encoded with an 8B/10B digital modulation code. A look-up table-based decoder (10) is used to demodulate 10-bit modulation codes, generating an 8-bit demodulated data output for each 10-bit "in-band" (valid) modulation code, and generating an error flag output (E) for each 10-bit "out-of-band" (invalid) modulation code (col. 21, line 44 to col. 22, line 11). Bacou's error flag is a "pseudo error" indication. Bacou's table look-up performs "comparing the

encoded character with a set of predefined in-band characters" as well as "comparing the encoded character with a set of predefined in-band characters", both occurring by look-up table address decoding. Bacou's received signal may further be encoded with a Reed-Solomon error correction code.

Bacou does not mention counting the error flags. Official notice is taken that the usefulness of counting error flags in improving the efficiency of Reed-Solomon code decoding, and for evaluating channel condition, was well known at the time the invention was made. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to incorporate counting of Bacou's receiver error flags into Bacou's receiver system. Such an addition would have been obvious because the usefulness of counting error flags in improving the efficiency of Reed-Solomon code decoding, and for evaluating channel condition, was already well known.

Bacou does not restrict the type of received data, and therefor does not specify receiving pixel data. Official notice is taken that the usefulness of pixel data was well known at the time the invention was made. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to apply Bacou's receiver to pixel data. Such an application would have been obvious because the usefulness of pixel data was already well known.

Regarding claims 31 and 33, Bacou does not specifically mention a "TMDS" code, although Bacou teaches 8B/10B codes with DC-balancing and reduced EMI. "TMDS" is described by applicant as an 8B/10B code with DC-balancing and reduced EMI. It would have been obvious to a person having ordinary skill in the art at the time

the invention was made to implement Bacou's receiver for a "TMDS" code. Such an implementation would have been obvious because Bacou's digital modulation code and applicant's digital modulation code are both the same type of code.

Allowable Subject Matter

14. Claims 1-9 and 16-24 are allowed.

Conclusion


15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen M. Baker whose telephone number is (703) 305-9681. The examiner can normally be reached on Monday-Friday (11:00 AM - 7:30 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert DeCady can be reached on (703) 305-9595. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Stephen M. Baker
Primary Examiner
Art Unit 2133

smb